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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, TRAN N	
ART UNIT	PAPER NUMBER
2834	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/14/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/14/2007.

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mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/517,839	PARK, YOUNG II	
	Examiner	Art Unit	
	Tran N. Nguyen	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The applicant's request for RCE, filed on 8/14/06, is acknowledged. Accordingly, the RCE for the application is acceptable and a RCE has been established. An action on the RCE follows.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-11 and 18-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP-14028570 (hereafter JP'570)** in view of **Hayashi (US 5751085).**

JP'570 (figs 1-9) substantially discloses a flat vibration motor comprising:

an upper case;

a lower case;

a conductive substrate formed on an upper surface of the lower case;

a magnet formed on the upper surface of the lower case, for generating magnetic field;

a conductive brush having an end electrically connected with the substrate;

a rotational shaft supported at an approximate center portion between the lower case and the upper case;

a rotator inserted onto the rotational shaft to rotate and formed of a resin base; a commutator formed on a lower surface of the rotator and connected to the other end of the brush; wherein the coil is fixed to the base; and a weight formed eccentrically inside the rotator, for enhancing eccentricity of weight center of the rotator; and the coil is received inside the base.

Also, **JP'570** shows in figures 2, 5-6 and 8-11 that the rotator (**r**) with the resin/insulating molded base (**9** in fig 2, or **28** of figs 5-6 and 8-11) that covers all the backside and outer circumference of the coils (**8** in fig 2, or **27** of figs 5-6 and 8-11).

However, **JP'570** does not disclose the newly added limitations of *the coil swelling suppressing rotator having a resin base that forms an upper, lower, and outer circumferential surfaces of the rotator; and the rotator having a coil with front side, back side and an outer circumferential side, wherein the coil is recessed into the rotator and being positioned in the rotor below the upper surface of the rotator and being covered all of the back side and outer circumferential side by resin base that suppresses expansion of the coil due to heat.*

Hayashi, however, teaches a molded structure wherein the coils (33) are embedded within a resin molded base, wherein the resin base (35) that forms an upper, lower, and outer circumferential surfaces (figs 1 and 3), wherein the resin base completely encapsulates the coils (33) (fig 3), i.e., the coil's all sides being embedded within the molded resin base (35) (fig 3), and the coils (33) being positioned below the upper surface of the resin base (35), as shown in fig 1; wherein the resin base having a flat upper surface (34a) and the coils (33) are positioned below the upper surface (34a). Also the molding material of resin base (35) is preferably any one of the same material as that of the substrate of the circuit board (31) so that the resin base and the substrate having the same thermal expansion coefficients and a material superior in heat resistance. Hayashi teaches that such single block structure of the resin base enclosing the coils eliminates irregularities of the coils so that the resin base and coil being configured into a monolithic structure having a rendered flat upper face (34a) that is opposite to the magnet (43). This yields the following advantages: the motor temperature can be restrained, and since the resin base and coil structure have no irregularities that cause the turbulent flows of air during

the motor operation, flows of air flowing between the magnet and the resin base and coil structure can be rendered laminar. Consequently, the windage loss can be reduced (col 3 line 8+). In other words, those skilled in the art would realize that **the coil's potential damage thermal expansion is suppressed because all sides of the coils are completely embedded within the resin base. This prevents the coils from being exposed to the environmental heat during the motor assembly process or the generated heat within the motor during its operation.**

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this instant case, those skilled in the art would clearly realize that the JP'570 coil assembly are significantly similar to the Hayashi's coil assembly, i.e., both are configured with molded-resin and coils being embedded within the resin base. However, **the Hayashi's coil assembly structure is enhanced by completely embedding the coils within the resin base, consequently the coil protection is improved, and performance efficiency is increased via windage loss reduction.**

Thus, based on the knowledge from **Hayashi's teaching of an essential structure of an improved coil assembly with the coils being completely covered by resin,** it would be obvious to one skilled in the art at the time the invention was made to modify the JP'570 coil assembly by completely embedding the JP'570 coils within the JP'570 resin base, as taught by Hayashi.

Also, regarding *the rotator suppresses thermal expansion of the coils*, those skilled in the art would realize that **the Hayashi's coils are completely enclosed within the resin base; thus, no bare surface of the coil is being exposed to any potential harmful environment such as**

heat introduced during assembling process or generated heat of the motor during operation. The fact that applicant has recognized another advantage that is preventing the coil from thermally expansion due to applying heat during assembling/mounting process, such advantage would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Furthermore, figs 1 and 4 of JP'570 show the JP'570 coil assembly and the magnet assembly faces one another a direct opposite position with a small gap therebetween. Thus, JP'570 arrangement is similar to the Hayashi's arrangement that is coil assembly and the magnet assembly faces one another a direct opposite position with a small gap therebetween. During the motor operation of JP'570, the rotating motion with respect to the two assemblies would create potential windage loss if there were an irregular surface or gap therebetween the two assemblies. Thus, beside the advantage of enhance protection for the coil from environment heat; the Hayashi's coil assembly also increases the performance efficiency by reducing windage loss. Therefore, **the Hayashi's essential teaching of a coil assembly structure having resin base completely embedding the coils there within would provide both advantages of protecting the coils from heat, and reduce windage loss**.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the **JP'570** motor so that the rotator's coil assembly is configured with a resin base that forms an upper, lower, and outer circumferential surfaces, and the rotator having a coil being recessed into the resin base and being positioned in the rotor below the upper surface of the rotator and being covered all of the back side and outer circumferential side by resin that

suppresses expansion of the coil due to heat, as taught by **Hayashi**. Doing so would provide the motor with the resin-base and coil assembly with improved protection from heat, and reduced windage loss.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP'570 and Hayashi, further in view of Yamaguchi et al (US 6,359,364).**

The combination of JP'570 and Hayashi substantially discloses the claimed invention, except for the limitation of the power supply means comprises: a conductive terminal formed a lower surface of the lower fixer; and a brush penetrating the lower fixer and having both ends connected to the terminal and the rotator.

Yamaguchi, however, teaches a flat vibration motor comprising these features (fig 2) for the purpose of there is no deviation when the brushes are installed at the bracket and the supporters can be formed of flexible synthetic resin in order to prevent the brushes from vibrating base of the brush is preferably drawn to the outside and is preferably used as a power supply terminal; therefore, less part counts for the brush and power supply assembly.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the vibration motor by configure the insulating base of the vibration motor housing with a conductive terminal formed a lower surface of the lower fixer; and a brush penetrating the lower fixer and having both ends connected to the terminal and the rotator, as taught by Yamaguchi. Doing so would mechanically improve the power supply assembly and the brush assembly structure relative to the base of the vibration motor so that less part counts resulting in reduction of manufacturing cost.

3. **Claims 13-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP'570** in view of **Hayashi** and **Yamaguchi.**

The combination of **JP'570 and Hayashi** substantially discloses the claimed invention, except for the limitations of the following:

(a) the a coil having an upper end, which is positioned lower than an upper end of the rotator, and the coil is received inside the base so that the coil is not observed at an upper surface of the rotator;

(b) power supply means comprises: a conductive terminal formed a lower surface of the lower fixer; and a brush penetrating the lower fixer and having both ends connected to the terminal and the rotator.

Hayashi, however, teaches a flat vibration motor comprising a rotator the a coil having an upper end, which is positioned lower than an upper end of the rotator, and the coil is received inside the base so that the coil is not observed at an upper surface of the rotator (figs 1, and 3) for the purpose of providing mechanical support as protection for the coils, as well as preventing the coils' thermal expansion.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the vibration motor by position the coil having an upper end, which is positioned lower than an upper end of the rotator, and the coil is received inside the base so that the coil is not observed at an upper surface of the rotator, as taught by Hayashi. Doing so would provide the motor with the resin-base and coil assembly with improved protection from heat, and reduced windage loss.

Yamaguchi, however, teaches a flat vibration motor comprising these features (fig 2) for the purpose of there is no deviation when the brushes are installed at the bracket and the supporters can be formed of flexible synthetic resin in order to prevent the brushes from

vibrating base of the brush is preferably drawn to the outside and is preferably used as a power supply terminal; therefore, less part counts for the brush and power supply assembly.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the vibration motor by configure the insulating base of the vibration motor housing with a conductive terminal formed a lower surface of the lower fixer; and a brush penetrating the lower fixer and having both ends connected to the terminal and the rotator, as taught by Yamaguchi. Doing so would mechanically improve the power supply assembly and the brush assembly structure relative to the base of the vibration motor so that less part counts resulting in reduction of manufacturing cost.

Response to Arguments

The applicant argues that *Hayashi's stator has a number of coils 33 embedded in a molded material 35 that has a flat surface 34a opposite to rotor magnet 43, thereby avoiding irregularities that cause turbulent flow of air during rotation of the rotor assembly 37 to reduce windage loss. Neither applied reference discloses or suggests a rotator structure with the claimed structural features or the claimed coil expansion suppression features. Because of this, the claimed structural features and the claimed coil expansion suppression features are not obvious to one of ordinary skill in the art, and the only possible grounds for his obviousness rejection claims 1-11, 18 and 19 are either improper speculation or improper hindsight reconstruction of Applicant's invention solely based on Applicant's disclosure.*

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In this instant case, those skilled in the art would clearly realize that the JP'570 coil assembly are significantly similar to the Hayashi's coil assembly, i.e., both are configured with molded-resin and coils being embedded within the resin base. However, **the Hayashi's coil assembly is further enhanced by completely embedding the coils within the resin base, consequently the coil assembly's protection is improved, and its performance efficiency is increased via windage loss reduction.**

Thus, **based on** the knowledge from **Hayashi's teaching of an essential structure of an improved coil assembly with the coils being completely covered by resin, it would be obvious to one skilled in the art at the time the invention was made to modify the JP'570 coil assembly by completely embedding the JP'570 coils within the JP'570 resin base. Doing so would improve the coils protection and the performance efficiency of the JP'075 motor.**

This is the Examiner's position for the rejections; therefore, the obviousness rejections are deemed to be proper and **not** relied on improper hindsight.

The applicant argues that *the JP '570 does not disclose a molded stator, so one of ordinary skill in the art would not be properly motivated to turn to Hayashi to form a molded stator. Hayashi does not disclose a molded rotor, so one of ordinary skill in the art would not be properly motivated to turn to Hayashi to modify JP '570's rotor.*

In response to applicant's arguments, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this instant case, it is **not** whether the JP '570 lacking of a disclosure of a molded stator, or Hayashi does not disclose a molded rotor. But rather, **the Hayashi's important teaching of an electromagnetic coil assembly having a resin base and coils being completed enclosed within the resin base**. Such electromagnetic coil structure with advantages of high heat resistance, windage loss, and improved protection for the coils (by completely cover the coil with resin), can be used generally as an electromagnetic component in various electromagnetic devices, or more specifically it can be used as a stator or a rotor in a dynamoelectric machines such as electric generator or electric rotary motor or electric linear motor or vibration motor because electromagnetic coil assembly is an essential component of dynamoelectric machines.

By comparing the **JP'570** coil assembly are significantly similar to the **Hayashi**'s coil assembly, i.e., both are configured with molded-resin and coils being embedded within the resin

base, but the Hayashi's coil assembly is further enhanced the protection of the coils and increase the efficiency thereof by completely embedding the coils within the resin base.

The Examiner's position is that it would have been obvious to an artisan to modify the JP'570 rotator by completely embedding the coils within the molded resin base, as taught by Hayashi in the Hayashi's disclosed coil assembly. The motivations for such modification would be improving the coil protection, as well as enhance the efficiency via reducing windage loss.

The applicant further argues that *with respect to the analogous art assertion, for a reference to be analogous, it must be in the same field as applicant's endeavor. In this regard, Hayashi is not in the same filed of endeavor as either JP '570 or Applicant's invention because Hayashi is not a vibration motor, and the problem to which Hayashi is directed is not the same as the problem addressed by Applicant.*

The applicant's arguments are addressed as follow:

The Hayashi and the claimed invention are analog art because both are related to dynamoelectric machines in general, and are related to electric motors in particular.

In fact, both Hayashi's motor and the claimed invention's motors are rotary motors, i.e., those skilled in the art would know that the Hayashi motor's rotor and the claimed invention motor's rotator, each rotates during the respective motors operation. *As for the argument that the claimed invention is a vibration motor*, those skilled in the art would understand that the only difference between the Hayashi's rotary motor and the claimed invention motor is the

incorporating of an unbalance weight to the rotor so that during rotation the rotor produces vibrating motion instead of rotating motion. Such unbalance weight incorporation is one of various implementation of an electric rotary motor.

Thus, the Hayashi's motor and the claimed invention motor are analog art and in the same endeavor of improving coil assembly structure as well as enhance efficiency of the motor.

Regarding the argument that *the problem to which Hayashi is directed is not the same as the coil thermal expansion suppressing addressed by Applicant*, those skilled in the art would realize that the **Hayashi's coils are completely enclosed within the resin base; thus, no bare surface of the coil is being exposed to any potential harmful environment such as heat introduced during assembling process or generated heat of the motor during operation**. Thus, the fact that applicant has recognized another advantage that is preventing the coil from thermally expansion due to applying heat during assembling/mounting process, such advantage would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

The applicant also argues that *Hayashi does not discloses that it is concerned with coil expansion that interferes with the proper operation of the stator, and Hayashi's use of a molded coil stator is concerned with reducing windage between the molded stator and the rotor*

assembly 37, which has not been shown to be relevant to the construction or operation of Applicant's vibration motor or to the vibration motor of JP '570.

In response to this argument, the applicant's attention is drawn to figs 1, 4 of JP'570 that show the JP'570 coil assembly and the magnet assembly faces one another a direct opposite position with a small gap therebetween.

Also, the applicant's attention is drawn to the present claimed invention's fig 5 that too shows coil assembly and the magnet assembly faces one another a direct opposite position with a small gap therebetween.

Thus, JP'570 arrangement and the present claimed invention arrangement are and similar to the Hayashi's arrangement that is coil assembly and the magnet assembly faces one another a direct opposite position with a small gap therebetween. During the motor operation, one of the coil assembly and the magnet assembly being rotating with respect to the other assembly this would create potential windage loss if there were an irregular surface or gap therebetween the two assemblies. Thus, beside the advantage of enhance protection for the coil from environment heat, the Hayashi's coil assembly also increases the performance efficiency by reducing windage loss. Therefore, **the Hayashi's essential teaching of a coil assembly structure having resin base completely embedding the coils there within would provide both advantages of protecting the coils from heat, and reduce windage loss**. This is the Hayashi's important teaching that the obviousness rejections have been relied on, not the bodily incorporation of a stator into a rotor, as alleged by the applicant.

Just for the sake of argument, those skilled in the art would understand that Hayashi's motor and the present claimed invention motor having stator and rotator are reversely re-arranged. Those skilled in the art would understand that both:

(a) motors, each with a magnet assembly rotor and a coil assembly stator;

or alternately reversing arrangement

(b) motors, each with a magnet assembly stator and coil assembly rotor

are well-known in the art because magnet assembly and coil assembly can be interchangeably used as rotor or stator as long as the two assemblies magnetically interact properly so that the motor is operatable as rotary motors or vibration motors, or a stationary element or a movable element, as in linear motors, or electric generators.

Lastly, the applicant argues that JP '570 apparently works well in its present configuration. Moreover, the Examiner may not pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

In response to this argument, the JP'570 coil assembly with the coil's axial side being exposed to potentially harmful environment such as heat during assembly or generated heat during the motor operation. This is the same problem as the applicant points out in the Background Art section. **The Hayashi's essential teaching of a coil assembly structure has a resin base completely encapsulating the coils within the resin base. This would solve the concerned problem of the coil being exposed to environment, such as heat.** Therefore, the

Examiner's clearly establish facts and motivations for the obviousness rejections. The applicant's allegation of picking and choosing from the Hayashi reference is wrongly accused.

Thus, the obviousness rejections are deemed proper and hereby maintained.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is 571-272-2030. The examiner can normally be reached on 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300. (Note: **Use this Central Fax number 571-273-8300 for all official response**.)

Do **not** use the Examiner's RightFax number without informing the Examiner first because, according to the USPTO policy, any document being sent via RightFax is treated as unofficial response and will not be officially dated until it is routed to the Central Fax.

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Tran N. Nguyen
Primary Examiner
Art Unit 2834